

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (Canceled)

Claim 6 (Currently Amended) A process for producing a gasoline stock by hydro-isomerisation of a feed constituted by a C5 to C8 cut or fraction thereof containing straight chain, mono-branched, di-branched and tri-branched paraffins and including at least C7 paraffins, and optionally naphthenes and aromatic compounds wherein said feed is a fresh feed not previously treated so as to separate di-branched and tri-branched paraffins therefrom, said process comprising:

conducting hydro-isomerization of said fresh feed in at least one hydro-isomerization section comprising at least one reactor; and

performing a separation of effluent from said hydroisomerization section in at least one separation section comprising at least one adsorption separation unit or at least one permeation separation unit wherein said separation produces at least two streams:

a first stream ~~which is~~ rich in di- and tri-branched paraffins, and optionally contains naphthenes and aromatic compounds, which is sent to a gasoline pool to provide a minimum content of 2% by weight of C7 - di-branched paraffins in the gasoline pool;

and a second stream ~~which is~~ rich in straight-chain paraffins and mono-branched paraffins; paraffins, and

~~wherein said at least one separation section is located downstream of said hydro-isomerization section; recycling said second stream recycled into said at least one hydro-isomerization section; and effluent from said at least one hydro-isomerization section is introduced into said at least one separation section.~~

Claim 7 (Previously Presented) A process for producing a gasoline stock by hydro-isomerization of a feed constituted by a C5 to C8 cut or fraction thereof containing straight chain,

mono-branched, di-branched and tri-branched paraffins and including at least C7 paraffins, and optionally naphthenes and aromatic compounds comprising:

conducting hydro-isomerization in at least two hydro-isomerization sections and performing a separation in at least one separation section comprising at least one adsorption separation unit or at least one permeation separation unit in which the separation section produces three streams:

a first stream which is rich in di and tri-branched paraffins, and optionally contains naphthenes and aromatic compounds, which is sent to a gasoline pool to provide a minimum content of 2% by weight C7-di-branched paraffins in the gasoline pool; a second stream which is rich in straight-chain paraffins which is recycled to an inlet of the first hydro-isomerization section; and a third stream which is rich in mono-branched paraffins which is recycled to an inlet of the second hydro-isomerization section, and

wherein the operating conditions of the first and second hydroisomerization sections are different and said at least one separation section is downstream of the at least two hydroisomerization sections.

Claim 8 (Previously Presented) A process according to claim 9, in which all of the effluent from said first hydro-isomerization section traverses said second hydro-isomerization section.

Claim 9 (Previously Presented) A process according to claim 7, wherein:

the feed is mixed with the straight-chain paraffins recycled from the separation section and the resultant mixture is sent to the first hydro-isomerization section,

effluent leaving the first hydro-isomerization section is mixed with the stream which is rich in mono-branched paraffins from the separation section and the resultant mixture is sent to the second hydro-isomerization section, and

effluent from the second hydro-isomerization section is sent to the separation section.

Claim 10 (Canceled)

Claim 11 (Original) A process according to claim 7, in which the effluents from the hydro-isomerisation sections are sent to at least one separation section.

Claim 12 (Previously Presented) A process according to claim 6, in which the separation section comprises at least two distinct units to carry out two different types of separation.

Claim 13 (Previously Presented) A process according to claim 6, in which the separation section comprises one or more sections operating by adsorption and the feed contains more than 12 mole % C7+.

Claim 14 (Previously Presented) A process according to claim 6, in which the separation section comprises one or more sections operating by permeation.

Claim 15 (Previously Presented) A process according to claim 12, in which the separation section comprises at least one unit operating by adsorption and at least one unit operating by permeation.

Claim 16 (Previously Presented) A process according to claim 6, in which at least one light fraction is separated by distillation in a distillation column downstream of the hydro-isomerization and/or separation sections, said light fraction having an average boiling point lower than the average boiling point of feed entering said distillation column.

Claim 17 (Previously Presented) A process according to claim 6, in which the feed contains a C5 cut and at least one deisopentanizer and/or at least one depentanizer are located downstream of the hydro-isomerization and/or separation sections.

Claim 18 (Previously Presented) A process according to claim 6, in which the feed contains a C6 cut but contains no C5, and at least one deisohexinizer is located downstream of the hydro-isomerization and/or separation sections.

Claim 19 (Previously Presented) A process according to claim 16, in which the light fraction or isopentane and/or pentane and/or a mixture of the two, or hexane, act as an eluent or a flushing gas for the adsorption or permeation separation unit, respectively.

Claim 20 (Previously Presented) A process according to claim 6, in which butane and/or isobutane is used as an eluent or a flushing gas for the adsorption or permeation separation unit, respectively.

Claim 21 (Original) A process according to claim 17, in which the isopentane is sent to the gasoline pool.

Claim 22 (Previously Presented) A process according to claim 6, in which the feed comprises at least 12 mole % of hydrocarbons containing at least 7 carbon atoms.

Claim 23 (Previously Presented) A process according to claim 6, in which the feed comprises at least 15 mole % of hydrocarbons containing at least 7 carbon atoms.

Claim 24 (Previously Presented) A process according to claim 6, in which hydro-isomerization is carried out at temperatures in the range 25°C to 450°C, at a pressure in the range 0.01 to 7 MPa, at a space velocity in the range 0.5 to 2 kg feed/kg catalyst/hr, and with an H₂/hydrocarbons molar ratio in the range 0.01 to 50.

Claim 25 (Previously Presented) A process according to claim 6, in which separation is carried out at temperatures in the range 50°C to 450°C and at a pressure in the range 0.01 to 7 MPa.

Claim 26 (Previously Presented) A process according to claim 7, wherein at least one light fraction is separated by distillation downstream of the hydro-isomerisation and/or separation sections, the feed comprises at least 12 mole % of hydrocarbons containing at least 7 carbon

atoms, and wherein the hydro-isomerisation is conducted at 50°C-450°C at a pressure of 0.01-7 mPa, at a space velocity in the range 0.5 to 2 kg feed/kg catalyst/hr, and with an H₂/hydrocarbons molar ratio in the range 0.01 to 50.

Claims 27-28 (Canceled)

Claim 29 (Previously Presented) A process according to claim 6, wherein said feed is a C7-C8 straight run cut.

Claim 30 (Previously Presented) A process according to claim 6, wherein said content of di-branched paraffins containing 7 carbon atoms is at least 3%.

Claim 31 (Previously Presented) A process according to claim 6, wherein said content of di-branched paraffins containing 7 carbon atoms is at least 4.5%.

Claim 32 (Previously Presented) A process according to claim 38, in which the feed comprises at least 12 mol% of hydrocarbons containing at least 7 carbon atoms.

Claim 33 (Previously Presented) A process according to claim 39, in which the feed comprises at least 15 mol% of hydrocarbons containing at least 7 carbon atoms.

Claim 34 (Previously Presented) A process according to claim 6, wherein the content of C5-di-branched paraffins in said stream rich in di and tri-branched paraffins is 12.6 to 14.9% by weight.

Claims 35-37 (Canceled)

Claim 38 (Currently Amended) A process for producing a gasoline stock by hydro-isomerisation of a feed constituted by a C5 to C8 cut or fraction thereof containing straight chain,

mono-branched, di-branched and tri-branched paraffins and including at least C7 paraffins, and optionally naphthenes and aromatic compounds comprising:

conducting hydroisomerization of said feed in at least one first hydroisomerization section;

passing effluent from said first isomerization section to a first separation section comprising at least one adsorption separation unit or at least one permeation unit wherein said at least one separation unit produces at least two streams: a first stream rich in straight-chain paraffins which is recycled to said at least one first hydroisomerization section; and at least one second stream rich in mono-branched paraffins and optionally naphthenic compounds and aromatic compounds;

passing said at least one second stream to an at least one second hydroisomerization section to convert a portion of the mono-branched paraffins to multi-branched paraffins;

passing effluent from said at least one second separation hydroisomerization section to at least one second hydroisomerization section to produce at least two effluents, one effluent rich in mono-branched paraffins which is recycled to said at least one second isomerization section, and another effluent rich in di- and tri-branched paraffins and optionally naphthenic and aromatic compounds, and optionally passing said second effluent to a gasoline pool and

wherein said feed is a fresh feed not previously treated so as to separate di-branched and tri-branched paraffins therefrom.

Claim 39 (Currently Amended) A process for producing a gasoline stock by hydro-isomerisation of a feed constituted by a C5 to C8 cut or fraction thereof containing straight chain, mono-branched, di-branched and tri-branched paraffins and including at least C7 paraffins, and optionally naphthenes and aromatic compounds comprising:

conducting hydroisomerization of said feed in at least one first hydroisomerization section;

passing effluent from said first hydro-isomerization section to at least one separation section comprising at least one adsorption separation unit or at least one permeation unit wherein said at least one separation unit produces at least three streams: a first stream rich in straight-

chain paraffin which is recycled to said at least one first isomerization section, a second stream rich in multi-branched and optionally naphthenic compounds and aromatic compounds and a third stream rich in mono-branched paraffins;

passing said third stream to at least one second hydro-isomerization section to convert mono-branched paraffins to multi-branched paraffins, and recycling resultant effluent from said at least one second hydroisomerization section to said at least one separation section and
wherein said feed is a fresh feed not previously treated so as to separate di-branched and tri-branched paraffins therefrom.

Claim 40 (Previously Presented) A process according to claim 7, in which the separation section comprises one or more sections operating by permeation.

Claim 41 (Previously Presented) A process according to claim 7, in which the separation section comprises at least one unit operating by adsorption and at least one unit operating by permeation.

Claim 42 (Previously Presented) A process according to claim 6, wherein the hydroisomerization is conducted with catalyst consisting of at least one mono-functional catalyst.